

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of :  
Kiyohiro YOKOYAMA et al. :  
Serial No. NEW : **Attn: Application Branch**  
Filed November 27, 2001 : **Attorney Docket No. 2001\_1766A**  
GLASS TOUCH PANEL

**PRELIMINARY AMENDMENT**

Assistant Commissioner for Patents,  
Washington, DC 20231

THE COMMISSIONER IS AUTHORIZED  
TO CHARGE ANY DEFICIENCY IN THE  
FEES FOR THIS PAPER TO DEPOSIT  
ACCOUNT NO. 23-0975

Sir:

Kindly amend the above-identified application as follows.

**IN THE CLAIMS**

**Please amend claims 3-4 and 6-20 as follows.**

3. (Amended) A glass touch panel as in claim 1, wherein the hygroscopic fine particles are mixed to the adhesive with a weight ratio of 10% or less.

4. (Amended) A glass touch panel as in claim 1, wherein a silver electrode mixed with a glass fiber is disposed at a predetermined position on an outer periphery of the transparent conductive film.

6. (Amended) A glass touch panel as in claim 4, wherein a silver paste having a electric resistivity of  $5.0 \times 10^{-4} \Omega \text{ cm}$  is used for the silver electrode.

7. (Amended) A glass touch panel as in claim 1, wherein the adhesive is a thermosetting or room-temperature setting epoxy type sealant or UV setting acrylic type sealant.

8. (Amended) A glass touch panel as in claim 1, wherein a light transmittance is 85% or more.

9. (Amended) A glass touch panel as in claim 1, wherein an operation temperature is from -30 to 65°C, under the condition of 90% RH or less.

10. (Amended) A glass touch panel as in claim 1, wherein a storing temperature is from -40 to 85°C under the condition of 95% RH or less.

11. (Amended) A glass touch panel as in claim 1, wherein an operation load when a switch is in a conductive state by pressing the upper transparent glass substrate with a test rod having a top end R of 4 mm, a diameter of 8 mm  $\phi$  and a hardness of 60° is from 10 to 200 g.

12. (Amended) A glass touch panel as in claim 1, wherein superfine particle dot spacers made of a thermosetting resin, each having a diameter of from 20 to 100  $\mu\text{m}$  and a height of from 3 to 6  $\mu\text{m}$ , are disposed at a pitch of from 2 to 4 mm on the transparent conductive surface of the lower transparent glass substrate.

13. (Amended) A glass touch panel as in claim 1, wherein the upper transparent glass substrate comprises borosilicate glass or soda glass having a thickness of from 0.15 to 0.3 mm, and the lower transparent glass substrate comprises a soda glass having a thickness of from 0.5 to 3.0 mm.

14. (Amended) A glass touch panel. as in claim 1, wherein the transparent conductive film is deposited by vapor deposition in a predetermined shape with sputtering or chemical vapor deposition.

15. (Amended) A glass touch panel as in claim 1, wherein a rating is 50 mA or less for DC 5V and an insulation resistance is 10 MΩ or more between the upper and lower electrodes for DC 25V.

16. (Amended) A glass touch panel as in claim 1, wherein a linearity is  $\pm 3.5\%$  or less.

17. (Amended) A glass touch panel as in claim 1, wherein a bounce by an ordinary finger operation method is 10 msec or less.

18. (Amended) A glass touch panel as in claim 1, wherein an electrostatic withstand voltage is 15 kV or more.

19. (Amended) A glass touch panel as in claim 1, wherein a dynamic range is from 0 to 0.7 V at the lower limit and from 5 to 4.6 V at the upper limit.

20. (Amended) A glass touch panel as in claim 1, wherein a size of the transparent glass substrate is 2 to 20 in.

**REMARKS**


The above claim amendments are presented in order to remove multiple claim dependencies, so as to reduce the required filing fee.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attachment page is captioned "**Version with markings to show changes made.**"

Respectfully submitted,

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Version with Markings to  
Show Changes Made

What is claimed is:

1. A glass touch panel comprising a pair of transparent glass substrates, each having a transparent conductive film and also opposed to each other at the transparent conductive film surface, wherein the upper transparent glass substrate as a touch input part and the lower transparent glass substrate are bonded by an adhesive mixed with hygroscopic fine particles.
2. A glass touch panel as in claim 1, wherein each of the hygroscopic fine particles has a diameter of  $50\text{ }\mu\text{m}$  or less.
3. A glass touch panel as in claim 1 ~~or 2~~, wherein the hygroscopic fine particles are mixed to the adhesive with a weight ratio of 10% or less.
4. A glass touch panel as in ~~any one of claims~~ 1 to 3, wherein a silver electrode mixed with a glass fiber is disposed at a predetermined position on an outer periphery of the transparent conductive film.
5. A glass touch panel as in claim 4, wherein the glass fiber is mixed to the silver electrode with a weight ratio of 10% or less.
6. A glass touch panel as in claim 4 ~~or 5~~, wherein a silver paste having a electric resistivity of  $5.0 \times 10^{-4}\text{ }\Omega\text{cm}$  is used for the silver electrode.
7. A glass touch panel as in ~~any one of claims~~ 1 to 6, wherein the adhesive is a thermosetting or room-temperature setting epoxy type sealant or UV setting acrylic type sealant.
8. A glass touch panel as in ~~any one of claims~~ 1 to 7, wherein a light transmittance is 85% or more.
9. A glass touch panel as in ~~any one of claims~~ 1 to 8, wherein an operation temperature is from  $-30$  to  $65^{\circ}\text{C}$  under the condition of 90% RH or less.
10. A glass touch panel as in ~~any one of claims~~ 1 to 9, wherein a storing temperature is from  $-40$  to  $85^{\circ}\text{C}$  under the condition of 95% RH or less.

11. A glass touch panel as in ~~any one of claims 1 to 10~~, wherein an operation load when a switch is in a conductive state by pressing the upper transparent glass substrate with a test rod having a top end R of 4 mm, a diameter of 8 mm  $\phi$  and a hardness of 60° is from 10 to 200 g.

12. A glass touch panel as in ~~any one of claims 1 to 11~~, wherein superfine particle dot spacers made of a thermosetting resin, each having a diameter of from 20 to 100  $\mu$ m and a height of from 3 to 6  $\mu$ m, are disposed at a pitch of from 2 to 4 mm on the transparent conductive surface of the lower transparent glass substrate.

13. A glass touch panel as in ~~any one of claims 1 to 12~~, wherein the upper transparent glass substrate comprises borosilicate glass or soda glass having a thickness of from 0.15 to 0.3 mm, and the lower transparent glass substrate comprises a soda glass having a thickness of from 0.5 to 3.0 mm.

14. A glass touch panel as in ~~any one of claims 1 to 13~~, wherein the transparent conductive film is deposited by vapor deposition in a predetermined shape with sputtering or chemical vapor deposition.

15. A glass touch panel as in ~~any one of claims 1 to 14~~, wherein a rating is 50 mA or less for DC 5V and an insulation resistance is 10 M $\Omega$  or more between the upper and lower electrodes for DC 25V.

16. A glass touch panel as in ~~any one of claims 1 to 15~~, wherein a linearity is  $\pm 3.5$  % or less.

17. A glass touch panel as in ~~any one of claims 1 to 16~~, wherein a bounce by an ordinary finger operation method is 10 msec or less.

18. A glass touch panel as in ~~any one of claims 1 to 17~~, wherein an electrostatic withstand voltage is 15 kV or more.

19. A glass touch panel as in ~~any one of claims 1 to 18~~, wherein a dynamic range is from 0 to 0.7 V at the lower limit and from 5 to 4.6 V at the upper limit.

20. A glass touch panel as in ~~any one of claims~~ 1 to 19, wherein a size of the transparent glass substrate is 2 to 20 in.

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